State Of California — The Resources Agency of California

Memorandum

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To: Commissioner James D. Boyd - Vice Chair, Presiding Member
Commissioner Jeffrey D. Byron, Associate Member

From: California Energy Commission - Rod Jones
1516 Ninth Street — Siting Project Manager
Sacramento, CA 95814-5512

Subject: **HYDROGEN ENERGY CALIFORNIA CENTER (08-AFC-8)**
ISSUES IDENTIFICATION REPORT

Attached is staff's Issues Identification Report for the Hydrogen Energy California Project (08-AFC-8). This report serves as a preliminary scoping document that identifies the issues that Energy Commission staff believes will require careful attention and consideration. During the AFC proceeding. . Energy Commission staff will present the issues report at the Informational Hearing and Site Visit to be held on September 16, 2009.

This report also provides a proposed schedule pursuant to the 12-month Application for Certification (AFC) process.

Attachment

cc: Proof of Service List
Docket 08-AFC-8

PROOF OF SERVICE (REVISED 09/03/09) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 09/14/09
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HYDROGEN ENERGY CALIFORNIA

(08-AFC-8)

ISSUES IDENTIFICATION REPORT

CALIFORNIA ENERGY COMMISSION

Siting, Transmission and Environmental Protection Division

ISSUES IDENTIFICATION REPORT
HYDROGEN ENERGY CALIFORNIA
(08-AFC-8)

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ISSUES IDENTIFICATION REPORT

California Energy Commission Staff

PURPOSE OF THE REPORT

This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the potential issues that have been identified in the case thus far. These issues have been identified as a result of our discussions with federal, state, and local agencies, and our review of the Hydrogen Energy California Project Application for Certification (AFC) and the AFC Supplement. The Issues Identification Report contains a project description, summary of potentially significant environmental and engineering issues, and a discussion of the proposed project schedule. The staff will continue to address the status of issues and progress towards their resolution in periodic status reports to the Committee.

PROJECT DESCRIPTION

On May 28, 2009, Hydrogen Energy International (HEI) submitted a revised Application for Certification (AFC) to the California Energy Commission to construct and operate an Integrated Gasification Combined Cycle (IGCC) power generating facility called Hydrogen Energy California (HECA). HEI is jointly owned by BP Alternative Energy North America Incorporated and Rio Tinto Hydrogen Energy, LLC.

The proposed HECA project would gasify petroleum coke (or blends of petroleum coke and coal, as needed) to produce hydrogen to fuel a combustion turbine operating in combined cycle mode. The hydrogen produced by the gasification block would fuel a 390 megawatt (MW) gross (250 MW net) combined cycle power plant providing California with baseload power. The 250 MWs is based on a project modification in which the applicant has eliminated the 100 MW peaker (auxiliary combustion turbine generator) from the project below the 100 tons/year $PM_{2.5}$ Air Quality Standard threshold.

Equipment in the gasification block would also capture approximately 90 percent of the carbon as carbon dioxide (CO_2) from the raw syngas (the direct end of the gasification process) at steady-state operation. This CO_2 will be transported to a custody transfer point within the Elk Hills oil field for CO_2 enhanced oil recovery (EOR) and sequestration. Due to the complex gasification and sequestration (storage) process, there is a larger than usual parasitic load on the combined-cycle unit.

The proposed project would be located on a 473-acre site (currently used for agricultural production of alfalfa, cotton, and onions), and is comprised of two parcels (Parts of Assessor's Parcel # 159-040-16 and 159-040-18). The project site would be located in western unincorporated Kern County, approximately 1.5 miles northwest of the unincorporated community of Tupman and 7 miles west of the outermost edge of the city of Bakersfield. It is bounded by Adohr Road on the north, Tupman Road to the east, and the California State Water Project aqueduct to the south, and Dairy Road to the west. The Elk Hills oil field is located approximately 1 mile south of the project site.

If approved, construction of the project would begin in May 2011 with commissioning and initial startup occurring from October 2014 through August 15, 2015, with full scale commercial operation by September of 2015. .

POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential issues the Energy Commission staff has identified to date. The Committee should be aware that this report might not include all of the significant issues that may arise during the case. Discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. . The identification of the potential issues contained in this report is based on comments of other government agencies and on our judgment of whether any of the following circumstances could occur:

- Potential significant impacts which may be difficult to mitigate;
- Potential areas of noncompliance with applicable laws, ordinances, regulations or standards (LORS);
- Areas of conflict or potential conflict between the parties;
- Areas where resolution may be difficult or may affect the schedule.

The following table lists all the subject areas evaluated and notes Air Quality, Efficiency and Water Resources as areas where potentially significant issues have been identified. Identification of an area as having no potential issues does not mean that an issue will not arise related to the subject area during the course of the AFC process. .

This report does not limit the scope of staff's analysis throughout this proceeding, but it acts to aid in the analysis of the potentially significant issues that the HECA proposal poses. The following discussion summarizes the potential issues, identifies the parties needed to resolve the issues, and where applicable suggests a process for achieving resolution. At this time, staff does not see these potential issues as non-resolvable.

Major Issues	DRs	Subject Area	Major Issues	DRs	Subject Area
Yes	Yes	Air Quality	No	No	Project Overview
No	No	Alternatives	No	No	Public Health
No	Yes	Biological Resources	No	Yes	Reliability
No	Yes	Cultural Resources	No	Yes	Socioeconomics
Yes	Yes	Efficiency	Yes	Yes	Soils and Water Resources
No	No	Facility Design	No	No	Traffic and Transportation
No	Yes	Geological Hazards	No	No	Trans. Line Safety & Nuisance
No	Yes	Hazardous Materials Handling	No	No	Transmission System Design
No	No	Land Use	No	No	Visual Resources
No	No	Noise	No	No	Waste Management
No	Yes	Paleontological Resources	No	No	Worker Safety

DR = Data Requests

AIR QUALITY/GREENHOUSE GASES

Staff reviewed the application for the Hydrogen Energy California Power Plant Project and has determined three air quality or greenhouse gas issues that could cause significant impacts, may result in compliance issues with State Law, or delay the Commission review process.

Emission Offsets

The project will require emission offsets for NOx, VOC, PM10 and SOx[1]. The project has not yet obtained specific emission reduction credits and the San Joaquin Valley Air Pollution Control District will require identification of credits before the determination of compliance is published. In addition, staff recommends that the Commission require the identification of these offsets prior to licensing a project. Therefore, this offset identification issue could cause a significant delay in permitting/licensing the project.

Secondary Emission Impacts

This project would require a large number of truck and train trips for fuel delivery (petroleum coke and coal). It is currently unclear if there will be mitigation that can adequately reduce the significance of these impacts.

Greenhouse Gas Emission Impacts

Staff has not yet performed a greenhouse gas (GHG) emission analysis for this type of project. Although the project as proposed is designed to reduce the new power plant site GHG emissions through CO_2 capture and sequestration, it may also create significant, and difficult to mitigate, fuel options and transportation related GHG emissions impacts. Staff will be evaluating the certainty of the project achieving sequestration through EOR.

Staff has concerns regarding both fuel sources, in terms of the availability of the primary fuel source (petroleum coke), the potential impact that reduced petroleum coke availability will have on the use of coal as a fuel source, and how this project will impact existing facilities that use this fuel source. Essentially, more coal use equals more GHG emissions per MWh (megawatt hour), so if the applicant cannot obtain enough pet coke then there is the potential that total project GHG emissions will increase. These questions also directly impact the GHG emissions related to coal mining and transportation that would occur due to the use of coal as a secondary fuel source.

Additional information and description is needed to complete the GHG impact assessment. Staff is currently unsure of the magnitude of the HECA project GHG emission impacts regarding laws, ordinances, regulations and standards (LORS) compliance such as compliance with the SB 1368 Emission Performance Standard or GHG emissions California Environmental Quality Act (CEQA) impact significance once all of the direct and indirect emission sources are fully detailed.

[1] Emission offsets:
NO_x (Nitrogen Oxide)
VOC (Volatile Organic Compounds)
PM (Particulate Matter)
SO_x (Sulfur oxide)

EFFICIENCY

As discussed in the HECA project description, Section 2.0, solid fuel and other feedstocks will be delivered to the plant by truck, and by train and truck. Solid byproducts and waste materials will be removed from the project by truck. The fuel consumed by these trucks represents a significant energy use, and could severely reduce the overall energy efficiency of the project.

WATER RESOURCES

The HECA project proposes to gasify petroleum coke (or blends of coke and coal) to produce hydrogen to fuel a combined cycle power plant. The project would require an average of approximately 6,411 acre feet per year (AFY) of water for power plant cooling (77% of water use), process water, and other plant uses (including demineralization). Plant operation on very hot days may cause the average project water use to increase to a level above the 6,411 AFY average volume identified: however, any increase would depend on the number days operated at maximum daily water use.). The project applicant proposes to use brackish groundwater supplied by the Buena Vista Water Storage District (BVWSD), combined with water recycled onsite, to meet the cooling and process water needs for the facility.

The applicant has an existing agreement with BVWSD for the delivery of 7,500 AFY of brackish water to be developed as part of the district's Brackish Groundwater Remediation Project [Appendix 01 of the project Application for Certification (AFC)]. However, the supply of this water is contingent upon "completion of the environmental review contemplated by this agreement" (BVWSD Water Transfer Terms, 8/15/09). In addition, page 5.14-14 of the project AFC states that the Brackish Groundwater Management Plan will require the completion of an Environmental Impact Report.

Staff is concerned that any potential delays in the environmental review and approval of the BVWSD Groundwater Management Plan (with the associated Brackish Groundwater Remediation Project component) may seriously or delay project construction. Staff is currently developing data requests to further identify the status of the environmental review and schedule for approval of the BVWSD Groundwater Management Plan (and the related Brackish Groundwater Remediation Project) This information is needed in order to clarify the availability of the proposed project water supply.

SCHEDULING

Following is staff's proposed 12-month schedule for the key events of the project. Meeting the proposed schedule will depend on: the applicant's timely response to staff's data requests; the timing of the San Joaquin Valley Air Pollution Control District's (SJVACD) filing of the Determination of Compliance; determinations by other local, state and federal agencies; and other factors not yet known. The SJVACD will be required to provide a Preliminary Determination of Compliance (PDOC) and a Final Determination of Compliance (FDOC). Prior to the publication of the Preliminary Staff Assessment (PSA) staff normally requires a PDOC from the air district, and the FDOC is required before publication of the Final Staff Assessment.

STAFF'S PROPOSED SCHEDULE–HYDROGEN ENERGY CALIFORNIA (08-AFC-8)

	ACTIVITY	DAY	DATE
1	Applicant files Application for Certification (AFC)	-48	5/28/09
2	Commission's determination that AFC is complete	0	8/26/09
3	Staff files Issue Identification Report	19	9/14/09
4	Informational Hearing and Site Visit	21	9/16/09
5	Staff files data requests	26	9/21/09
6	Applicant provides data responses	56	10/21/09
7	Data response and issue resolution workshop**	70	11/5/09
8	Local, state and federal agency draft determinations	75	11/10/09
9	Staff and applicant each file Status Report 1	84	11/19/09
10	Staff and applicant each file Status Report 2	113	12/17/09
11	Staff files Preliminary Staff Assessment (PSA)	148	1/21/10
12	PSA workshop	174	2/17/10
13	Local, state and federal agency final determinations	175	2/18/10
14	Staff and applicant each file Status Report 3	188	3/3/10
15	Staff files Final Staff Assessment (FSA)	225	4/8/10
16	Prehearing Conference*		TBD
17	Evidentiary hearings*		TBD
18	Committee files proposed decision*		TBD
19	Hearing on the proposed decision*		TBD
20	Committee files revised proposed decision*		TBD
21	Commission Decision*		TBD

* The assigned Committee will determine this part of the schedule.
** Estimated date; depends on parties' availability.
Please Note: Under the Warren Act – Public Resources Code, the standard licensing process for an Application for Certification is twelve months. However, the Siting ,Transmission and Environmental Protection Division currently has 32 projects in-house which is about five times the historical workload, and may make achieving the 12-month schedule difficult. Energy Commission staff will do its best to review the HECA project in as timely a manner as possible. .

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE *HYDROGEN ENERGY CALIFORNIA PROJECT*

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
(Rev. 9/3/09)

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DECLARATION OF SERVICE

I, April Albright, declare that on September 14, 2009, I served and filed copies of the attached Hydrogen Energy California Center (08-AFC-8) Issues Identification Report dated, September 14, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/hydrogen_energy].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

✓ sent electronically to all email addresses on the Proof of Service list;

✓ by personal delivery or by depositing in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

✓ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-8
1516 Ninth Street, MS-4
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docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Original signed by
April Albright